UNITED UAV TECHNICAL RESOURCE

UIH Multi-Sensor Multirotor Drone

Product overview, payload-selection matrix and field mission-planning checklist

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Product source	store.uniteduav.com/products/uih-multi-sensor-multirotor-drone

This guide is an evaluation aid, not an operating manual, regulatory approval, mission authorization or performance guarantee.

1. Product role and aircraft platform

Why this product was selected

UIH is a useful archival subject because one foldable aircraft platform can be configured for visible inspection, thermal inspection, mapping support, security patrol, emergency response and long-range observation. That breadth reflects UNITED UAV as a multi-category UAV supplier rather than a single-application brand.

Configuration matters: the aircraft, payload, controller, data link, software, site conditions and local permissions must be evaluated as one mission system.

Published aircraft specifications

Field	Published value	Planning interpretation
Folded size	291 x 147 x 175 mm	Check loaded case size, batteries, controller and payload separately.
Takeoff weight	1,450 +/- 5 g	Confirm the exact configuration and applicable weight class.
Maximum payload	300 g	Payload mass alone does not prove mechanical, electrical or software compatibility.
Flight time	45-50 min	Treat as a published figure; validate loaded endurance for the actual mission.
Hover time	35-40 min	Plan reserve, return route and contingency margins using field data.
Maximum horizontal speed	20 m/s	Use a mission speed that preserves image quality, control and legal compliance.
Maximum wind-resist speed	12 m/s; Level 6 listed	Apply the most conservative limit from aircraft, payload and local procedure.
Maximum transmission range	10-12.5 km, FCC, unobstructed	Not an authorization for beyond-visual-line-of-sight or a guaranteed site range.
GNSS	GPS + Galileo + BeiDou + GLONASS	Verify geometry, interference, local multipath and fallback behavior.
Positioning	GNSS + optical flow + ToF	Surface texture, light, height and environment can affect aided positioning.
Operating temperature	-10 to 40 deg C	Payload and battery limits may be narrower.

Source note

Values above were transcribed from the UNITED UAV UIH product page on 2026-08-27. Product configurations and specifications can change; use the current product page and configuration-specific documentation for procurement or operations.

2. Payload-selection matrix

Start with the evidence requirement, not the sensor count. Define what must be detected, measured, located or reported, then select the lightest payload that can produce reviewable evidence.

Option	Published capability snapshot	Best-fit evaluation questions	Key limits to verify
1T	115 g; 4K; 40x hybrid zoom; 8 MP visible camera; AI recognition/tracking	Is daylight visual evidence sufficient? What defect size and stand-off distance are required?	No thermal sensor; validate zoom quality, lighting and motion blur.
2T	162 g; visible + 640 x 512 thermal; 40x hybrid zoom; AI tracking	Is a paired visual/thermal record needed for inspection, patrol or search?	Thermal accuracy, emissivity workflow and environmental interpretation are not established by resolution alone.
3T	267 g; wide + tele + thermal + laser; 100x hybrid zoom; 3-1,200 m ranging	Is target localization or range context required with multi-sensor imagery?	Near the aircraft payload limit; confirm loaded endurance, balance, link and integration.
4T	290 g; 11x optical; 160x hybrid; 640 x 512 thermal; 5-1,200 m ranging; IP54	Does the mission require stronger long-range observation and thermal/range context?	Leaves little nominal payload margin; configuration-level verification is essential.
5T	195 g; dual visible cameras; 11x optical; 160x hybrid; 4K; AI tracking	Is detailed long-range visible inspection more important than thermal data?	No thermal sensor; validate detail at the intended distance and lighting.

Five configuration gates

Gate	Decision	Evidence required
1	Evidence	Define the smallest feature, temperature pattern, range or location evidence the report must contain.
2	Compatibility	Confirm mass, mount, center of gravity, power, interface, protocol, storage and control support.
3	Endurance	Measure loaded hover, route time, reserve and battery turnaround under representative conditions.
4	Link and positioning	Test the actual frequency plan, interference environment, GNSS quality and degraded modes.
5	Workflow	Verify capture settings, naming, time sync, storage, review, traceability and retention before field use.

3. Mission-configuration patterns

These are evaluation patterns, not pre-approved packages. Each mission still requires a site-specific risk assessment, current regulations, qualified personnel and configuration verification.

Mission pattern	Likely starting payload	Capture plan	Acceptance evidence
Daylight asset inspection	1T or 5T	Overview, systematic detail passes, scale/context frames and repeatable angles.	Readable target detail, complete coverage, image log and reviewer sign-off.
Thermal inspection	2T, 3T or 4T	Paired visible/thermal records, stable distance, environmental notes and reference conditions.	Traceable image pairs, interpretable thermal contrast and documented limitations.
Mapping support	Payload matched to required deliverable	Define ground sampling need, overlap, terrain, control/check points and processing chain.	Coverage report, check-point results, processing log and stated accuracy method.
Security or perimeter observation	5T for visible detail; 2T/3T/4T when thermal context is needed	Predefined sectors, observation distances, privacy limits, escalation and retention rules.	Time-stamped observations, operator log, access control and lawful data handling.
Emergency response	2T/3T/4T based on detection and location need	Rapid site briefing, controlled search pattern, communications plan and handoff format.	Shared coordinates/context, clear uncertainty, event log and receiving-team acknowledgement.

Do not infer from a product page

- A listed transmission distance is not proof of usable range at a specific site or permission for beyond-visual-line-of-sight operations.
- A thermal resolution is not a temperature-accuracy statement or a defect-detection guarantee.
- A laser range does not establish eye-safety classification, regulatory permission or guaranteed target reflectivity performance.
- An IP rating on a payload does not automatically apply to the complete aircraft configuration.
- AI recognition and tracking support does not establish detection classes, accuracy, false-positive rate or autonomous decision authority.

The product page is a starting source for configuration review. A field-ready decision requires configuration-specific manuals, test evidence and local operating approval.

4. Field evaluation checklist

Stage	Confirm before proceeding	Record
Mission definition	Objective, deliverable, feature size, coverage, timing, privacy and data-retention constraints.	Mission brief and acceptance criteria.
Configuration	Aircraft serial/configuration, payload, mount, firmware, controller, batteries, storage and accessories.	Configuration sheet with version/date.
Authority	Airspace, site permission, operator qualification, visual-line-of-sight requirement, radio and data rules.	Approval references and responsible person.
Site	People, traffic, structures, RF/GNSS interference, takeoff/landing area, emergency landing options and weather.	Site sketch, hazards and controls.
Power	Battery health, charge state, temperature, loaded endurance sample, reserve and turnaround plan.	Battery IDs, cycles and timing.
Sensors	Lens condition, focus, exposure, thermal setup, time sync, storage, rangefinder/AI settings where applicable.	Preflight sample and settings log.
Command and link	Frequency, controller state, antennas, map data, home point, lost-link behavior and observers/comms.	Link check and brief acknowledgement.
Evidence QA	Coverage, sharpness, metadata, file count, integrity, coordinates, thermal pairing and missing areas.	QA result, gaps and rework decision.
Closeout	Data transfer, access control, retention, maintenance findings, incident/near-miss log and lessons learned.	Signed closeout record.

Minimum field-test sequence

Step	Test	Pass evidence
A	Bench integration	Confirm mass, mount, clearance, power, data/control, storage and version records.
B	Controlled hover	Check stability, control authority, telemetry, sensor stream and abnormal indications.
C	Short representative route	Measure loaded duration, link margin and evidence quality without assuming maximum range.
D	Evidence review	Have the intended reviewer decide whether the data meets the stated acceptance criteria.
E	Scale decision	Expand only after limits, reserves, roles and abort criteria are documented.

5. Source, scope and rights

Primary source

UNITED UAV UIH Multi-Sensor Multirotor Drone product page, accessed 2026-08-27:
https://store.uniteduav.com/products/uih-multi-sensor-multirotor-drone

Scope

This document reorganizes selected public product-page facts into a durable evaluation resource. It does not replace the current product page, quotation, configuration-specific datasheet, operating manual, maintenance manual, training, risk assessment, regulator guidance or local authorization.

Claim handling

- Published specifications are labeled as such and dated.
- Operational implications are framed as checks or questions, not guarantees.
- No price is reproduced because price, availability and package contents can change.
- Payload compatibility must be confirmed for the exact aircraft, mount, power, interface, software and mission.
- Readers should report conflicts between this document and current product documentation to UNITED UAV before use.

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